

## SCIENCE FRAMEWORK - EARTH/GEOLOGY 5.7

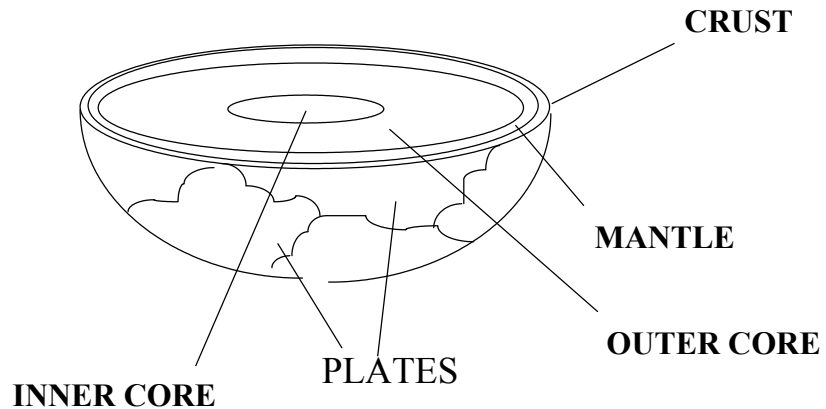
### OVERVIEW

We live on the cool, outside surface of the earth -a part called the **crust**, like the crust on a loaf of bread. This crust is made of pieces called plates that fit together like a puzzle. These plates float on a layer of liquid rock called the **mantle**. At the center of the earth is a metal core which is broken into two parts, the inner and outer core.

As you can see, the crust has cracks in it, like cracks in an egg shell. These cracks are called **faults**.

Each separate part of the of the crust is called a plate - a **tectonic plate** to be exact. These plates move around very slowly on top of the mantle - remember, they float. It takes millions of years for plates to move miles, but even over a short period of time, plates are moving.

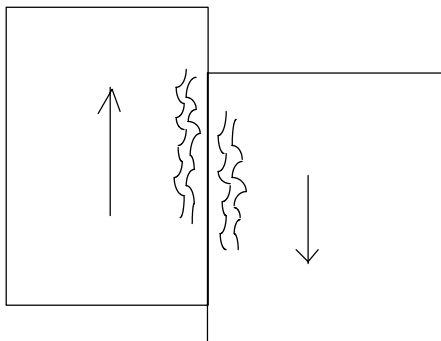
### A LOOK INSIDE THE EARTH



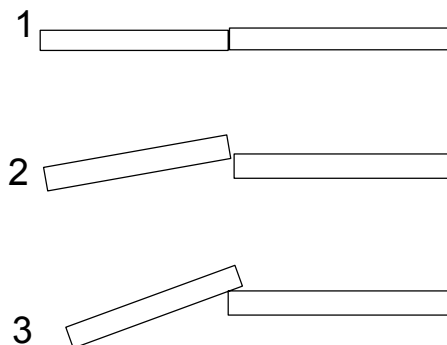
### MAKING MOUNTAINS...

Sometimes plates pull apart, allowing magma (lava) to push out from below. This causes new mountains to be formed as the lava cools and turns to rock. Sometimes plates push together. When this happens, one plate often pushes beneath the other one, creating very tall mountains like the Himalayas.

### PLATE TECTONICS



**Plates rubbing together create earthquakes.**



**Over millions of years, plates can push together to form mountains.**

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### EXTRA PLATE VOCABULARY...

**Convergent Boundaries** - Plates pushing together.

**Divergent Boundaries**- Plates pulling apart.

**Sliding Boundaries** - Plates sliding sideways against each other.

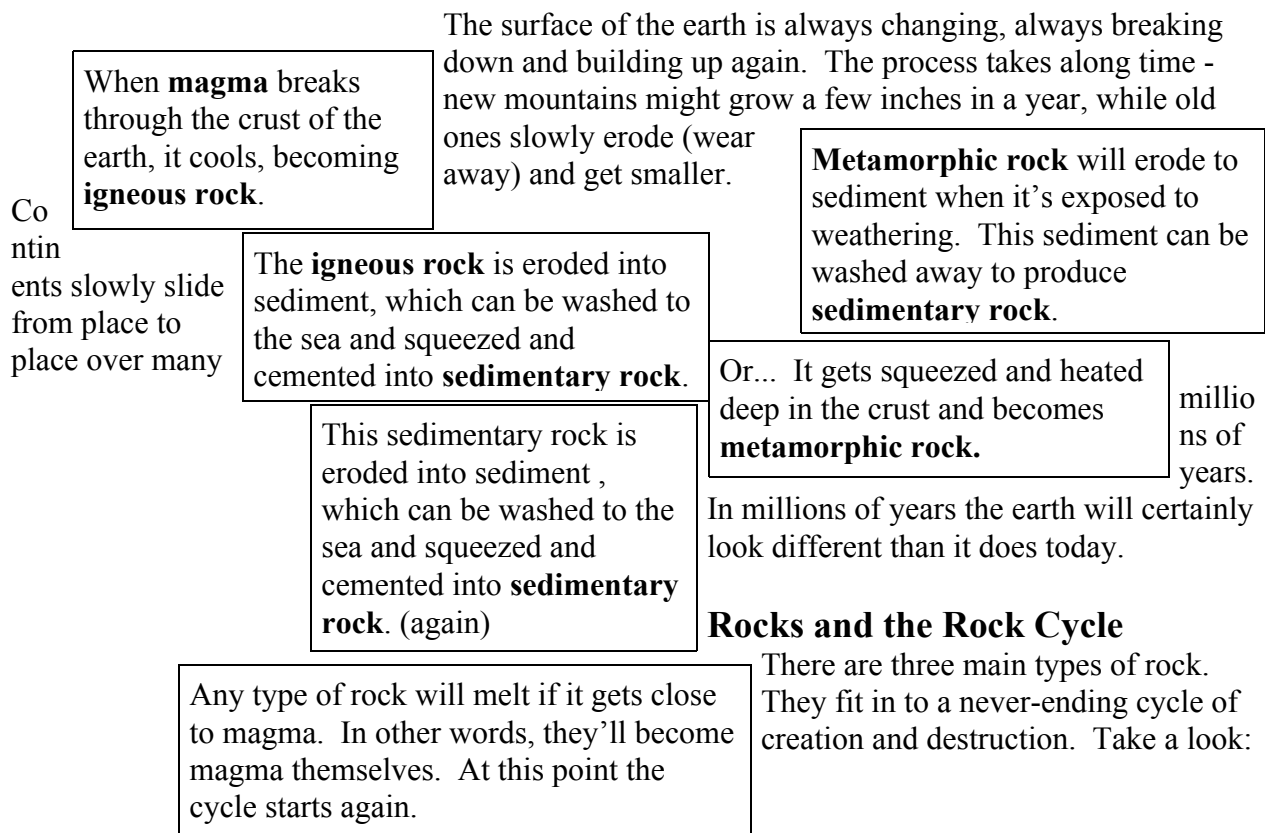
### VOLCANOES

Whether the plates are pushing together or pulling apart, volcanoes are likely to occur. A volcano is a place in the earth's crust where the molten rock of the mantle can break through. It can be a place where the crust is thin, or a place where the plates are moving.

### EARTHQUAKES

When plates rub together along their fault lines (the places where they meet) we experience an earthquake. In an earthquake, the ground shakes or rolls violently for a short period of time. Earthquakes can be strong or weak, depending on how powerfully the plates slide against each other. Earthquakes are natural disasters that can cause great damage to buildings, roads and living things.

### CHANGE



### FOSSILS

## **SCIENCE FRAMEWORK - EARTH/GEOLOGY 5.7**

Sediment often has bones, shells and plant material mixed in with it. As it is compressed (squeezed) into sedimentary rock, these extra things become fossilized, meaning they turn to rock themselves. As the earth's crust changes, these fossils are uncovered. We can study the fossils and find out things about the earth's history. We might find ancient sea animal fossils out in desert or in the mountains, which show that the oceans and continents were once in different shapes and locations. We also find fossils of certain animals and plants that show changes in climate over time.

### **SOIL, EROSION AND MAN'S EFFECT ON EARTH**

The crust of the earth has a layer of soil over most of its land. Soil is made from decomposed living things, like plants and animals as well as weathered rock. Soil is very important to life. Most plants need it to grow and plants form the base for the food chain for most living things on land.

**Erosion** - Sometimes much of the soil is removed from the land. This can happen when people use bad farming techniques or strip the land of the plants which hold the soil in place. Once the damage has occurred, wind and water quickly blow or wash the top soil away, leaving the land dead and barren. To bring the land back to life, new plants must be brought in and planted to build the soil up and hold it in place.

**Weathering** - The surface of the earth is exposed to the weather. Wind and rain wear away at the surface of the earth, softening and shrinking mountains and changing the face of the land. In cold temperatures, water freezes and expands, creating forces that can crack rock and pavement. In simple terms, stuff left out in the weather eventually wears away to nothing.